BEFORE THE FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554
January 28, 2013

In the Matter of)
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AT&T Petition to Launch a Proceeding) GN Docket No. 12-353
Concerning the TDM-to-IP Transition)
)
Petition of the National Telecommunications)
Cooperative Association for a Rulemaking to)
Promote and Sustain the Ongoing TDM-to-IP)
Transition)
)

Comments of the BroadBand Institute of California
and the
Broadband Regulatory Clinic

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I. Introduction

The BroadBand Institute of California (BBIC) and the Broadband Regulatory Clinic (BRC) hereby submit their comments regarding the above captioned proceeding. The BroadBand Institute of California (BBIC) is a law and public policy institute at the Santa Clara University School of Law engaging in research and education in the areas of technology regulation and public policy. The BBIC identifies, documents, addresses and publicizes the broadband and advanced network technology needs of California and the nation, and the impact of state and federal policies on these needs. The Broadband Regulatory Clinic (BRC) is a regulatory policy clinic at the Santa Clara University School of Law. The BBIC and the BRC collaborate and assist traditional civil rights and disability rights organizations, urban and rural community oriented organizations, as well as foundations and businesses in the pursuit of the BBIC and the BRC?s mission.

The BBIC and the BRC (hereinafter Commenters) Commenters agree that the FCC should establish an appropriate regulatory forum to address the issues raised by AT&T?s petition as well as the petitions of NTCA and US Telecom and the concerns raised by NASUCA and other interested parties. The issues include the advisability of different regulatory strategies including reregulation, deregulation and forbearance, the structure and pace of regulation and whether and how such regulation should match the pace of the proposed TDM to IP transition. Issues also include the impact of the regulation and technology transition upon the various classes of users and competitors as well as the appropriateness of the burden classes of users and competitors may be required to share.

II. The Technical Framework

The telecommunications industry has seen rapid technological changes during the last few decades with the evolution of Public Switched Telephone Network (PSTN) services that were originally capable of transporting only voice, to the transformation of Time-Division-Multiplexing (TDM), and finally Voice over IP (VoIP) services on both copper and fiber networks. The proposed transition by AT&T is an investment in a more efficient, cost effective, and robust network infrastructure. Additionally, as many consumers continue to demand next generation network connectivity and services, the transition to an all-IP (Internet Protocol) infrastructure is clearly underway. However, understanding the underlying technology and interconnection of the TDM-to-IP transition is critical to deciding how to proceed with multiple stakeholders requesting an FCC rulemaking.

A. The Transition is Underway

AT&T proposes select wire centers participate in TDM-to-IP transitional trial runs that will remove legacy TDM telecommunications equipment. This assumes the transition will be simultaneously emulating TDM functionality with softswitches and Media Gateways?which will serve as intermediary devices between existing TDM equipment and IP-based networks to leverage existing legacy equipment. Legacy communication networks use TDM switching that is based on the allocation, reservation, and switching of time slots per connection or circuit. In contrast, IP networks or packet switching networks rapidly break the call into individual packets of data that are transmitted individually in a shared channel and then reassembled at the end point. This transitional phase has already begun, but before the Commission can consider AT&T?s request for rulemaking, the technical parameters, specifications, and objectives of the wire center trial runs need to be established in order effectively to recommend prudent regulatory guidelines.

B. The Transition is Technology-Neutral Rather Than Regulatory in Nature

The Commenters share the concern of the Free Press? petition that the Communications Act sought to preserve common carriage protections, and that IP-based transmissions have been mischaracterized as Internet content resulting in regulatory ambiguity. However, the Commission needs only to recognize established ?functional? tests for differentiating common carriage services.

Under the NARUC test, transmissions of IP and TDM are functionally indistinguishable and regulatory definitions should remain technology-neutral. The transition from TDM-to-IP is an important change in technology, not a change in function, or transmission. Additionally, the Commenters support the National Telecommunications Cooperative Association (NTCA) petition in respect to its technology neutral approach that recognizes existing and future regulation should focus on the impact on consumers not the evolving technology:

The fundamental need of all Americans for high-quality communications and affordable access to the services that enable such communications remains unchanged and is entirely independent of the underlying technology used within the PSTN or the PRCN that connects them. Indeed, the core objectives of the Act - which include, above all else, making available ?so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide and world-wide wire and radio communication with adequate facilities at reasonable charges? - must apply with equal force whether services are rendered through Class 5 TDM switches and copper networks or routers, softswitches, and cutting-edge fiber or wireless solutions.

The statutory requirements were meant to be technology neutral, and the impact of the transition on consumers must be the primary focus of this Commission, not unnecessary deregulation.

III. Law and Regulations

AT&T proposes a clean-slate approach which forbears the implementation of regulations for all providers, rather than revising current regulations and adhering to the FCC?s mission. This proposal fails for three reasons. First, IP constitutes a ?telecommunication service? as described by the 1996 Telecommunications Act. Second, Congress has expressly granted the FCC power to regulate telecommunications. Third, Congress has granted specific powers to the states that cannot be preempted by the FCC.

A. IP is a Telecommunications Service

AT&T?s suggestion that there is exclusive federal jurisdiction over phone service using VoIP technology by classifying it as an ?information service? is flawed from a policy perspective and in legal reasoning. As FCC Chairman Genachowski recently stated, ?technology transitions don?t change the basic mission of the FCC.? The transition from circuit-switched networks and services to IP-based networks and services is not the first technological transition in communications, and it is likely not the last. Like all prior significant transitions, this transition impacts all aspects of the FCC?s mission.

The fact that the information transmission on an IP-network occurs in packets does not change the way in which it should be classified and regulated. ?Telecommunications? is defined as ?the transmission, between or among points specified by the user, of information of the user?s choosing, without change in the form or content of the information as sent and received.? There is no change in the form or content of a conversation sent over the IP platform. Further, the process by which the transmission of information from end user to end user takes place under TDM technology and IP-based technology, uses considerably the same, albeit a slightly modified, infrastructure, and should be subject to similar regulation. An understanding and appreciation of this process illustrates the similarity and overlap between the technologies.

Accordingly, by providing a functionally identical end service to a user or consumer, AT&T?s IP technology falls under the Commission?s Title II jurisdiction, meriting equivalent regulation to that of its TDM predecessor.

B. Power Expressly Granted to the FCC

One of the FCC?s central missions is to ?make available ? to all the people of the United States ? a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.? Congress has further defined the FCC?s purpose through the Telecommunications Acts of 1934 and 1996 that ensure consumer protection, competition, and interconnectivity. In its proposal AT&T requests that the FCC abstain from regulating the communication systems, which is contrary to the FCC?s core mission. Specifically, the petition requests that the Commission forbear its section 214 power mandating ILECs to obtain approval to change or discontinue TDM service in a given region when it wishes to replace TDM with IP service. Although beneficial to AT&T?s intended business strategy, without such a provision putting ILECs? ?feet to the fire,? there is no guarantee that consumers will be provided adequate service, much less any service at all.

Additionally, AT&T requests that the Commission not only preclude other carriers and their customers from requesting TDM-to-IP interconnectivity in the proposed trial wire centers, but also into the future. Section 251 of the Act expressly mandates that carriers allow for interconnection with their fellow carriers to foster competition. AT&T?s proposal calls for the Commission to forego enforcement of current regulations. This asks the FCC to ignore its congressionally delegated responsibilities for nothing more than AT&T?s individual business benefit. It is important to note, however, that the act does not guarantee all providers ?a sufficient return on investment; quite to the contrary, it is intended to introduce competition into the market.? Yielding to such a demand would inhibit competition at the cost of the consumer and AT&T?s competitors.

C. Powers Granted Specifically to the States

The Commission may only regulate within its statutorily designated power. AT&T incorrectly argues that all VoIP services are information services over which the Commission has exclusive jurisdiction. Congress intentionally enacted the current joint federal-state jurisdictional structure. Congress alone, not the FCC or telecommunications industry, can alter this composition. ?State Commissions? have ?regulatory jurisdiction with respect to intrastate operations of carrier[s].? In addition, Congress has specifically granted states the responsibility of maintaining interconnectivity between providers, universal service funds and Carrier of Last Resort (?CoLR?) regulations. These regulations existed

in common law long before telephones were invented and according to the National Broadband Plan (?NBP?), will continue to exist in the future.
AT&T incorrectly argues that the FCC has, and should act on, the power to forbear action, and preempt state regulation over purely intrastate matters. The Supreme Court has held that section 152(b) ?fences off from FCC reach or regulation intrastate matter, including matter[s] in connection with intrastate service.? The FCC can only preempt state law in two scenarios: first, to the extent necessary to avoid a conflict between federal and state law; second, where the intrastate telecommunications service is inseverable from the interstate service component. AT&T points to the Vonage Order as an illustration of the commission?s ability to preempt state authority. This assertion is simply incorrect. The Vonage Order dealt with ?nomadic? VoIP exclusively. AT&T?s plan, however, involves ?fixed? rather than ?nomadic? VoIP. In 2006, the FCC issued an order stating that:
An interconnected VoIP provider with the capability to track the jurisdictional confines of customer calls would no longer qualify for the preemptive effect of our Vonage Order and would be subject to State regulation. This is because the central rationale justifying preemption ? would no longer be applicable.

In the Telecommunications Act, congress specifically and deliberately delegated to the states the ability to regulate intrastate telecommunications matters. State commissions are still best aware of local conditions, and are accordingly in the best position to act concurrently with the FCC in fostering a regulatory climate allowing business and technology to flourish, while also protecting the consumer.

To reiterate, ?the fact that the network technology is shifting to packets does not change the [regulatory] logic.? AT&T is providing the same functional end service to the consumer on substantially the same technological infrastructure. The IP platform does not fall outside of a ?telecommunication service? simply because AT&T asserts an ostensible difference in that which is being provided. A transition from TDM to IP does not demand full-scale deregulation and change in regulatory climate, eliminating the influence of those state and federal regulatory entities which have ensured that business and technology thrive up until this point.

IV. Impact on Users

The FCC and States should continue to have the power to regulate telecommunications in order to limit the potential negative effects of the TDM to IP transition on users and providers at all levels. The TDM-to-IP transition envisioned by AT&T involves deregulating the largest telecommunications carriers leaving interconnection problems at the mercy of market economics and ignores the reality that AT&T, and other ILECs remain dominant and entrenched in the voice-service industry.
An unregulated telecommunications market would inevitably result in a shift in costs for the transition from telecommunication providers to consumers, one that is ill advised considering the current

economic environment. Consumer costs will include new non-TDM based equipment on both ends of service operation, affecting individual consumers and businesses and smaller competitive carriers. Traditional wireline service remains a leading choice for consumer households despite a continuing trend in residential access line decline, and there will be an estimated 20 million consumers relying on PSTN services in 2018.

Three major product markets will be impacted by the TDM to IP transition: mass market telecommunications (residential users), retail enterprise encompassing small and large businesses and the wholesale special access market. Each of these markets will be affected by the proposed AT&T trial runs and deregulation in unique ways.

A. Impact on the Mass Market

The TDM to IP transition, if not adequately regulated, could raise the cost of phone service for mass-market users. Since access to substitutes varies by geographic market and zip code to zip code in some cases, states must maintain the power to regulate the prices of phone services. As many as 52 million residential consumers use switched access line phone services.   In 2009, the average cost for switched access line phone service was $50 per month.   State and national price regulation is critical in states where market forces may not keep prices competitive because consumers are relying on ILEC?s for phone service. Approximately 15 States have two thirds of zip codes with nine or fewer CLEC and Non ILEC VoIP providers.

The mass-market access to product substitutes will also be impacted by adoption and use of broadband. Some interconnected VoIP services require separate broadband Internet access. Consumers who do not already have broadband access service must include this cost in their total cost for residential phone service, or they will have limited substitutes as switched access lines are phased out. According to the Broadband Adoption Survey, only 65% of Americans are broadband users at home.   A switched access user moving to VoIP service could experience increased rates of up to $66.25 per month for phone service, representing a 30% increase in service cost.   Due to bundling, consumers may feel obligated to purchase other services as well.

B. Impact on Retail Enterprise

States and the FCC must continue to regulate voice services for businesses to ensure affordable choices for retail enterprise consumers. Approximately 90% of business wireline connections are switched access, where ILEC?s provide approximately 60% of the switched access lines.   Small businesses will likely feel the brunt of the TDM to IP transition since over 90% of the 27 million US firms are small.   Similar to the mass market, geographic markets vary in regards to the number of competitors. In some regions two thirds or more of business connections are provided by ILEC?s.

C. Impact on Wholesale Special Access Market

The Commission?s competition policies must ensure that competitors continue to obtain access to ILEC last mile facilities and interconnection at reasonable rates, and on reasonable terms and conditions. While Commenters agree that a move to modernize the telecommunications systems in the U.S. is appropriate, Commenters reiterate caution against ?eliminat[ing] the very policies that have allowed competition to develop,? and eschew the deregulation proposed by AT&T and NTCA in comments submitted to the Commission. The competitive carriers (CLECs) rely on the wholesale special access market to service over 22 million switched access (not VoIP) lines and ILECs service close to 85 million switched access lines. The lines served by ILECs and CLECs represent over 79 million residential and business locations that continue to rely on copper loop systems and that will need to be upgraded to IP-platform devices or technology in order to connect to all-IP wire centers. With 69% of CLECs lines provided either through ILEC service resale or leasing of ILEC lines the ?interconnection mandates and arbitration provisions... ensure that competitive carriers can exchange telecommunications traffic with ILEC?s ubiquitous and entrenched networks on a reasonable and nondiscriminatory basis.? Notwithstanding AT&T?s assertions of economic hardship allegedly caused by the continued maintenance of out moded copper plant, in fact, growing services such as AT&T?s new-age U-Verse service is currently composed of 90% copper wiring, with fiber only being implemented in new developments. Therefore, AT&T?s claim of impending economic loss due to dual maintenance of IP and TDM copper systems in conjunction interconnection mandates, is misleading, at best.

The concerns represented throughout the competitor carriers? comments filed in response to the AT&T petition are reaffirmed by a report produced by the Florida Public Services Commission. In the Florida Report CLECs alleged a number of anti-competitive actions by ILECs in the state. These actions included: charging unjust fees and Unbundled Network Element (?UNE?) rates that made competing with ILECs economically infeasible; ILECs refusing to negotiate interconnection with CLEC networks on fair, reasonable, and/or non-discriminatory terms; allegations of poor service from ILECs to the CLECs and CLEC customers, including ILEC delays in processing orders and resolving service issues and ILEC personnel being ?strategically incompetent,? and; ILECs offering promotional rates to their retail customers that were below wholesale rates available to CLECs.

The interconnection problems competitive carriers face in Florida are also experienced by competitors outside of Florida as illustrated by two recent allegations of interconnection problems involving AT&T. A January Cbeyond declaration filed with the FCC alleges that AT&T refused a request for Session Initiation Protocol (?SIP?) interconnection and in December of 2012 Sprint alleged AT&T refused a request for IP-to-IP interconnection for the exchange of voice traffic. In light of allegations of interconnection problems, AT&T?s request for deregulation appears to be premature.

D. Reliability and Quality of Service across all Markets

The recent storms that battered the East Coast demonstrated the fragile nature of our telecommunications system in the U.S., particularly when such systems are unregulated. Without mandatory safety and security measures our National telecommunications network is vulnerable to both natural disasters and potentially man-made catastrophes when power lines are disrupted and facilities do not have adequate backup power systems.

A recent report of the Public Safety and Homeland Security Bureau regarding Derecho, highlighted the failures of using voluntary best practices, including wide spread failure of 9-1-1 services for up to several days following the natural disaster, with more than 3.6 million people in six states losing some degree of connectivity. Had the the carriers implemented voluntary Communications Security, Reliability, and Interoperability Council (?CSRIC?) ?best practices? they could have mitigated or prevented many of the storm's serious effects on communications networks.   Wireline centers went down because of untested faulty equipment and backup powering systems that failed easily.   The failures of wireline centers then spread to wireless networks because current 9-1-1 architecture, often has wireless networks ?piggyback? onto wireline systems to reach 9-1-1 services.
Power outages affect communication devices that operate on commercial power supplies and/or have a limited battery life.   Increased deployment of generators at cell sites would reduce the probability of wireless system outages due to power loss.   However, wireless networks experience connectivity problems with wireline users, and can have trouble reaching 9-1-1 services due to wireless network congestion and coverage problems. Consequently, less densely-populated areas such as West Virginia suffered the greatest percentage of cell sites lost raising the threat of total coverage loss for residents when forced onto wireless only networks. The Derecho Report recommended ?diligent implementation of the current CSRIC best practices,? but Commenters believe that the FCC needs to work with providers and set mandatory standards to ensure reliability and quality services. As the Derecho Report noted: ?failure, and the resulting damage, was costly.?   The lessons from the 2012 Derecho storm demonstrate the critical need for mandatory regulation of telecommunications services to ensure emergency services communications are reliable and available when needed most.

V. AT&T Needs to Provide More Information Regarding Its Proposed Trial Runs

The Commenters are cognizant of the fact that the TPM-IP transition is underway. The Commenters are also appreciative of the fact that trial runs are a necessary stepping stones in the nationwide transition process. With that said, the Commenters submit that while trial runs are important in the TPM-IP transition, AT&T, and not the FCC, bears the burden of providing more information with respect to the details of the trial runs. Absent the requisite information, AT&T should not be allowed to proceed with its trial runs.

A. AT&T?s Proposal Regarding Trial Runs

AT&T proposes that the FCC open a proceeding implementing a number of geographically limited trial runs to help guide the nationwide transition. AT&T requests that the Commission solicit proposals from ILECS for specific wire centers and specify steps to notify customers. AT&T?s ideal trial run also includes: 1) the elimination of outdated regulations pertaining to legacy TDM-based networks; 2) the preclusion of carriers from demanding service or interconnection in TDM format in those wire centers; and 3) Commission-based reforms to facilitate migration of end-user customers from legacy to next-generation services.

B. AT&T Carries the Burden of Providing a Detailed Description of the Trial Run

By shifting the burden of providing a detailed description to the FCC, AT&T takes no responsibility in providing any metrics or guidelines as to what it would consider a successful trial run. The Commenters submit that AT&T, not the FCC, should carry the burden of providing more information involving the trial runs.

1. AT&T Needs to Provide Information Mentioned in the Comments by Public Knowledge and National Cable & Telecommunication Association

Commenters suggest that the inquiries proposed by Public Knowledge and the National Cable & Telecommunications Association (?NCTA?) serve as a working foundation in determining a successful trial run. Specifically, in its comment, Public Knowledge states that AT&T should provide the following information: 1) what regulations need suspension; 2) why these regulations need suspension; 3) how customers and competitors would be adequately protected during the ?experiment?; 4) what metrics the FCC and State regulators would apply; and 5) what the desired outcome would be.

The NCTA calls for AT&T to provide a more detailed description with respect to the following: 1) number and location of test sites; 2) time frame for deploying new IP switches; 3) time frame for decommissioning old TDM switches; 4) implications for existing interconnection and transit agreements; 5) process for continued coordination among providers during the testing process; 6) planned outreach to consumers and other carriers in test areas; and 7) proposal for evaluating the success of the trial.

Therefore at a minimum, Commenters submit AT&T must answer the following questions before the proposed trial runs can move forward.

C. AT&T?s Trial Runs Must Consider Six Fundamental Principles

Commenters further suggests that in addition to providing answers to the questions mentioned above, AT&T and all other ILECS must appreciate that the transition must be governed by the following fundamental principles as explained by Public Knowledge: 1) providing service to all Americans; 2) interconnection and competition; 3) consumer protection; 4) network reliability; and 5) public safety.

Commenters propose the addition of a sixth fundamental principle: 6) Transparency and Accountability to the FCC and the states. In short, all ILECs seeking to conduct trial runs must be completely transparent as to their trial run processes and must be held accountable to the FCC and the States in maintaining a threshold level of assurances during the trial runs. Additionally, AT&T and other ILECS must be accountable to the FCC?s newly formed Technology Transitions Policy Task Force. Together, the parties must pursue the common goal of innovation, investment, competition, and protection of consumers.

VI. A Historical Perspective: The Analog-to-Digital Transition Provides Valuable Lessons Which AT&T and FCC Should Take into Consideration

The most recent nationwide technological transition prior to the current TDM-IP transition was the analog-to-digital television (DTV) transition. It behooves the FCC and the ILECs to take note of the successes and failures of the DTV transition lest the FCC and AT&T repeat some of the same mistakes.

Lennard G. Kruger?s May 2009 report on the DTV transition serves as a foundational primer to understanding the DTV transition. The DTV transition had to take multiple factors into consideration which include, but are not limited to, the following: 1) the availability and functionality of the proposed technology (digital converter box); 2) the viability of providing subsidies via coupons to help consumers pay for the required technology; 3) the number and categories of people still relying on the old technology (typically low-income, elderly, disabled, non-English speaking minorities, and rural populations); and 4) the effectiveness of educational efforts to create awareness. Also notable is the fact the FCC, Congress, and even the President were all heavily involved in the entire transition process and extended the transition deadline multiple times relative to the availability of the technology and the readiness of consumers.

The above-mentioned factors considered in the DTV transition are absolutely applicable to the TDM-IP transition as well. Commenters urge the FCC and AT&T to recognize that a thorough and detailed education plan to create awareness for consumers is critical to the transition process. Commenters further submit that subsidies to certain groups should be considered to facilitate the transition to IP. Furthermore, Commenters also argue that ILECs must recognize that in a massive nationwide transition such as this, there can be no hard deadline; instead, the parties must be comfortable working with flexible target dates.

VII. Conclusion

The transition from TDM-to-IP is an important change in technology, not a change in function, or transmission. The fact that the information transmission on an IP-network occurs in packets does not change the way in which it should be classified and regulated. The process by which the transmission of information from end user to end user takes place under TDM technology and IP-based technology, uses considerably the same, albeit a slightly modified, infrastructure, and should be subject to similar regulation. Indeed, by providing a functionally identical end service to a user or consumer, AT&T?s IP technology falls under the Commission?s Title II jurisdiction, meriting equivalent regulation to that of its TDM predecessor. Consequently Commenters encourage the Commission to adopt a technology neutral approach that recognizes existing and future regulation should focus on the impact on the consumers not the evolving technology.

In its proposal AT&T requests that the FCC abstain from regulating the communication systems, which is contrary to the FCC?s core mission. Although beneficial to AT&T?s intended business strategy, without oversight, there is no guarantee that all potential consumers will be provided accessible, affordable service.

The FCC and States should continue to have the power to regulate telecommunications in order to limit the potential negative effects of the TDM to IP transition on users and providers at all levels. The FCC should not entertain proposals to deregulate the provision of services and potentially weaken state authority to regulate as well. Instead, consistent with the principles of: 1) providing service to all Americans; 2) interconnection and competition; 3) consumer protection; 4) network reliability; 5) public safety and 6) transparency and accountability, the Commission, in concert with the states, should exercise statutorily mandated oversight of the transition process.

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Respectfully submitted this 25th day of February 2013,

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